

REMARKS

Applicants respectfully request the Examiner to reconsider the present application in view of the foregoing amendments and additions to the claims.

Status of Claims

In the present Reply, claims 1, 2, 7, 8 and 9 have been amended and claims 13-16 have been added. Claims 10-12 stand withdrawn from further consideration. Thus, claims 1-16 are pending in the present application.

No new matter has been incorporated by way of these amendments or by newly added claim since each amendment and new claim has support in the present specification and various Figures. For instance, the amendments to claims 1, 2, 7 and 8 have support throughout the present specification and are clearly minor in character. These are clarifying and not amendments that are narrowing in scope. Thus, Applicants in no way are conceding any limitations with respect to the interpretation of the claims under the Doctrine of Equivalents. Support for the amendment to claim 9 can be found in the specification at page 13, lines 16+, page 14, lines 12+ and the Figures. New claim 13 is supported in the written description at least at page 14, lines 7-10. New claim 14 has support at page 13 and in the Figures. New claim 15 has support at page 13, lines 18-24. And new claim 16 is supported in the specification at page 15, lines 2-4. Thus, no new matter has been added.

Based upon the above considerations, entry of the present amendments is respectfully requested.

In view of the following remarks, Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Supplemental Office Action

Applicants acknowledge the supplemental Office Action that issued March 21, 2005.

Objection to Specification and Issues Under 35 U.S.C. § 112, First Paragraph

The specification is objected to under 37 C.F.R. § 1.71 as not being clearly written. Also, claim 9 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicants respectfully traverse, and reconsideration and withdrawal thereof are respectfully requested.

Page 8, line 21 of the present specification is actually referring to Figure 3, and not Figure 4 of the present specification (the change to the present specification does not add new matter). Applicants submit the following comments a)-g) regarding this change in the specification and the definition and role of the face angle.

a) Applicants submit that on the basis of the specification, the face angle is defined as an angle between the vertical plane VP1 including the center line CL of the shaft axis

and the horizontal tangent line N which is in contact with the center of gravity FC of an area of the hitting face 2 (see page 8, lines 20 to 25 of the present specification). A face angle can be defined in any golf club head in this manner. Each face angle of a club head is determined according to the technique of target golfers thereof. Of course, a golf club head having the face angle being zero also exists (see comments in Office Action regarding claim 9).

b) Some specific examples of the face angles are illustrated in Reference Figures 1 to 3 which are attached at the end of this Reply.

c) Reference Figure 1 shows a club head having a face angle being about +5 degrees and a loft angle being about 10 degrees. This head is placed on the horizontal plane HP on condition that the face angle θ and the loft angle are set predetermined mentioned above, and the axial center line CL is located in the vertical plane VP1 with a lie angle thereof. In the condition, the club face faces towards the left side with respect to a target direction TL, which is a direction perpendicular to the vertical plane VP1. So, a golf ball hit by this club head tends to fly toward the left side like a hook.

d) Reference Figure 2 shows a club head having a face angle being about minus 5 degrees and a loft angle being 10 degrees. This club head is also placed on the

horizontal plane HP according to the same manner as illustrated in Reference Fig. 1. Because the club face faces towards the right side of the target direction TL, a golf ball hit by the head tends to fly toward the right side like a slice.

e) If the club head illustrated in Reference Fig.1 is turned rightward little by little around the center line CL, a condition to which the tangent line N becomes parallel to the vertical plane VP1 would be obtained as shown in Reference Figure 3 (this is the measuring state as defined in the instantly pending claim 9).

f) In the same way, if the club head illustrated in Reference Figure 2 is turned leftward little by little around the center line CL, a different measuring state would be obtained (not shown; no Reference Figure attached).

g) The necessity of rotating (or turning) the club head around the axial center line of the shaft is clear with the above explanation. It is clear that Fig. 3 attached with the instant specification shows a head in the measuring state, because the tangent line N is parallel to the vertical plane VP1. Here, there is a case that the loft angle measured in the measuring state does not indicate 10 degrees.

Accordingly, Applicants respectfully submit that this objection to the present specification has been overcome. Also, the rejection of claim 9 has been overcome in view of the comments above. Reconsideration and withdrawal thereof are respectfully requested.

Issues Under 35 U.S.C. § 112, Second Paragraph

Claims 1-2 and 7-8 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse, and reconsideration and withdrawal thereof are respectfully requested.

Applicants respectfully refer the Examiner to the scope of claims 1-2 and 7-8 as presented herein. Since the Examiner's suggested clarifying amendment has been adopted for the claims, this rejection has been overcome. Reconsideration and withdrawal of this rejection are respectfully requested.

Issues Under 35 U.S.C. § 103(a)

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '968 (JP 2001-299968) in view of Stites et al. '020 (U.S. Patent No. 5,935,020) (see paragraph 8 of the Office Action). Also, claim 9 stands rejected in view of JP '968 and Stites '020 as applied to claims 1-8 above, and further in view of Rice '214 (U.S. Patent No.

6,821,214) (see paragraph 9 of the Office Action). Each of these rejections is respectfully traversed, and reconsideration and withdrawal thereof are respectfully requested as follows.

In order to improve the intended direction of a golf ball, the golf club head according to the present invention has a large moment of inertia but small depth of center of gravity (e.g., refer to the conditions of pending claim 1). Such a new concept for the present invention is not disclosed by the asserted combination of references.

Still, the Examiner in part refers to how JP '698 discloses a moment of inertia around a center line of a shaft being $4661 \text{ g} \times \text{cm}^2$. Applicants respectfully submit that one of ordinary skill in the art in changing the depth of center of gravity of a club head is aware that the moment of inertia thereof also would or could change the depth of center of gravity. In this regard, if the Examiner is combining JP '968 with Stites '020, the skilled artisan would have to modify the head of JP '968 to have the depth of center of gravity of 42mm in consideration of the Stites '020 reference (see the Office Action at page 5, lines 5-12). However, the head as proposed in the Office Action could not maintain a moment of inertia as being 4661 g/cm^2 . In this regard, Applicants note that if a proposal for modifying the cited reference in an effort to attain the claimed invention causes the reference to become inoperable or destroys its intended function, then the requisite motivation to make the modification would not have existed. *See In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984) (Federal Circuit stating that modifying the French

apparatus as the Board suggested would render the apparatus inoperable for its intended purpose); *In re Fritch*, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992); *see also In re Ratti*, 123 USPQ 349, 352 (CCPA 1959). That is the case here because the proposed golf club head would destroy the function of, or render the JP '698 reference as inoperable. Thus, Applicants respectfully submit that the requisite motivation is lacking with respect to both cited rejections.

The rejections have been overcome because a proper obviousness inquiry requires consideration of three factors: (1) the prior art reference (or references when combined) must teach or suggest all the claim limitations; (2) whether or not the prior art would have taught, motivated, or suggested to those of ordinary skill in the art that they should make the claimed invention (or practice the invention in case of a claimed method or process); and (3) whether the prior art establishes that in making the claimed invention (or practicing the invention in case of a claimed method or process), there would have been a reasonable expectation of success. *See In re Vaeck*, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991). In light of *Vaeck* and *Gordon*, the requisite motivation is lacking and these rejections have been overcome. Withdrawal thereof is respectfully requested.

Applicants further note that the golf club head disclosed in JP '968 has a ratio between the moment of inertia around the axial center line of the shaft and the moment of inertia around an axis FA defined as the reference being from 0.6 to 1.0. Therefore,

there many difficulties for the skilled artisan in having to shift the center of gravity freely while maintaining this ratio. In other words, it would have been difficult for one of ordinary skill in the art to modify the head as disclosed in JP '968 so that both the ratio and the depth of center of gravity as instantly claimed could be met. Such difficulties take away from the required reasonable expectation of success. Further, it is not clear as to why the skilled artisan would do so based on the readings of these references. Thus, the requisite reasonable expectation of success and motivation are lacking.

In other words, with regard the present invention's achievement of a large moment of inertia but small depth of center of gravity, the cited combinations of references do not provide the requisite motivation and reasonable expectation of success so one of skill in the art could achieve the claimed invention. Accordingly, these rejections have been overcome since the required motivation and/or reasonable expectation of success are lacking. *Vaeck*.

With further regard to pending claim 9 and paragraph 9 of the Office Action, the cited Rice '214 reference does not take away from the inoperability or destroyed function of the primary reference. Further, the cited combination of the three references fails to disclose all instantly claimed features. Thus, the cited combination of references does not satisfy the required disclosure of all claimed features, *Vaeck*, and this rejection has been overcome for this additional reason.

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Accordingly, reconsideration and withdrawal of both rejections are respectfully requested.

Conclusion

A full and complete response has been made to all issues as cited in the Office Action. Applicants have taken substantial steps in efforts to advance prosecution of the present application. Thus, Applicants respectfully request that a timely Notice of Allowance issue for the present case.


In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Attachments:
Reference Figures 1-3

Respectfully submitted,

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